

Release notes for ENDF/B Development n-070_Yb_174
evaluation



April 26, 2017

- **psyche** Warnings:

1. Strength function in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ISOTOPE MASS = 174. L = 1 / STRENGTH FUNCTION IS 6.92314E-02 / STRENGTH FUNCTION 6.92314E-02 / LIES OUTSIDE LIMITS 1.00000E-05 TO 1.50000E-04 (0): URR str. ftn.

```
FILE 2
SECTION 151
ISOTOPE MASS = 174. L = 1
STRENGTH FUNCTION IS 6.92314E-02
STRENGTH FUNCTION 6.92314E-02
... [1 more lines]
```

2. Non-threshold reaction with Q value differing from PSYCHE's expectations
FILE 3 / SECTION 22 / THE CALCULATED Q 8.36311E+05 DISSAGREES WITH THE GIVEN Q 7.40093E+05 (0): Iffy Q

```
FILE 3
SECTION 22
THE CALCULATED Q 8.36311E+05 DISSAGREES WITH THE GIVEN Q 7.40093E+05
```

- **recent** Warnings:

1. Statistical weight of certain L values were incorrect
0: RRR goof (a)

```
Calculate Cross Sections from Resonance Parameters (RECENT 2015-1)
=====
Retrieval Criteria----- MAT
File 2 Minimum Cross Section- 1.0000E-10 (Standard Option)
Reactions with No Background- Output (Resonance Contribution)
... [426 more lines]
```

- **groupie** Errors:

1. Very small elastic cross section found
0: Small elastic

```
Multi-Group and Multi-Band Parameters from ENDF/B Data (GROUPIE 2015-2)
-----
ENDF/B Input and Output Data Filenames
ENDFB.IN
ENDFB.OUT
... [97 more lines]
```

- **fudge-4.0** Warnings:

1. Missing a channel with a particular angular momenta combination
resonances / resolved (Error # 1): missingResonanceChannel

WARNING: Missing a channel with angular momenta combination L = 0, J = 1.5 and S = 1.5 for "capture"
WARNING: Missing a channel with angular momenta combination L = 1, J = 0.5 and S = 0.5 for "capture"
WARNING: Missing a channel with angular momenta combination L = 1, J = 0.5 and S = 1.5 for "capture"
WARNING: Missing a channel with angular momenta combination L = 1, J = 1.5 and S = 1.5 for "capture"
... plus 1 more instances of this message

2. Cross section does not match sum of linked reaction cross sections
crossSectionSum label 0: total (Error # 0): CS Sum.

WARNING: Cross section does not match sum of linked reaction cross sections! Max diff: 0.19%

3. Cross section does not match sum of linked reaction cross sections
crossSectionSum label 1: nonelastic (Error # 0): CS Sum.

WARNING: Cross section does not match sum of linked reaction cross sections! Max diff: 0.88%

- fudge-4.0 Errors:

1. The spin statistical weights are off, indicating missing channels
resonances / resolved / MultiLevel_BreitWigner (Error # 0): badSpinStatisticalWeights

WARNING: The spin statical weights for L=1 sums to 2.0, but should sum to 3.0. You have too few channels for re

2. Calculated and tabulated Q values disagree.
reaction label 36: n[multiplicity:'2'] + Yb173 (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: -7505768.4402771 eV vs -7464633. eV!

3. Calculated and tabulated Q values disagree.
reaction label 37: n[multiplicity:'3'] + Yb172 (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: -13873087.04269409 eV vs -13831950. eV!

4. Calculated and tabulated Q values disagree.
reaction label 38: n + H1 + Tm173 (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: -8020825.340057373 eV vs -7979690. eV!

5. Calculated and tabulated Q values disagree.
reaction label 39: n + H2 + Tm172 (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: -12746464.89889526 eV vs -12705330. eV!

6. Calculated and tabulated Q values disagree.
reaction label 40: Yb175 + gamma (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: 5781219.58404541 eV vs 5822354. eV!

7. Calculated and tabulated Q values disagree.
reaction label 41: n + He4 + Er170 (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: 698958.3583679199 eV vs 740093.3 eV!

8. Calculated and tabulated Q values disagree.
reaction label 42: H1 + Tm174-s (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: -2338788.278137207 eV vs -2297653. eV!

9. Calculated and tabulated Q values disagree.
reaction label 43: H2 + Tm173_s (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: -5796259.239135742 eV vs -5755124. eV!

10. Calculated and tabulated Q values disagree.
reaction label 44: H3 + Tm172_s (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: -6489231.958282471 eV vs -6448097. eV!

11. Calculated and tabulated Q values disagree.
reaction label 45: He3 + Er172_s (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: -7361213.288421631 eV vs -7320078. eV!

12. Calculated and tabulated Q values disagree.
reaction label 46: He4 + Er171_s (Error # 0): Q mismatch

WARNING: Calculated and tabulated Q-values disagree: 6380531.536224365 eV vs 6421666. eV!

- njoy2012 Warnings:

1. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (0): HEATR/hinit (4)

---message from hinit---mf6, mt 16 does not give recoil za= 70173
one-particle recoil approx. used.

2. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (1): HEATR/hinit (4)

---message from hinit---mf6, mt 17 does not give recoil za= 70172
one-particle recoil approx. used.

3. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (2): HEATR/hinit (4)

---message from hinit---mf6, mt 22 does not give recoil za= 70174
one-particle recoil approx. used.

4. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (3): HEATR/hinit (4)

---message from hinit---mf6, mt 28 does not give recoil za= 70174
one-particle recoil approx. used.

5. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (4): HEATR/hinit (4)

---message from hinit---mf6, mt 32 does not give recoil za= 70174
one-particle recoil approx. used.

6. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (5): HEATR/hinit (4)

---message from hinit---mf6, mt 51 does not give recoil za= 70174
one-particle recoil approx. used.

7. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (6): HEATR/hinit (4)

---message from hinit---mf6, mt 52 does not give recoil za= 70174
one-particle recoil approx. used.

8. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (7): HEATR/hinit (4)

---message from hinit---mf6, mt 53 does not give recoil za= 70174
one-particle recoil approx. used.

9. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (8): HEATR/hinit (4)

---message from hinit---mf6, mt 54 does not give recoil za= 70174
one-particle recoil approx. used.

10. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (9): HEATR/hinit (4)

---message from hinit---mf6, mt 55 does not give recoil za= 70174
one-particle recoil approx. used.

11. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (10): HEATR/hinit (4)

---message from hinit---mf6, mt 56 does not give recoil za= 70174
one-particle recoil approx. used.

12. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (11): HEATR/hinit (4)

---message from hinit---mf6, mt 57 does not give recoil za= 70174
one-particle recoil approx. used.

13. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (12): HEATR/hinit (4)

---message from hinit---mf6, mt 58 does not give recoil za= 70174
one-particle recoil approx. used.

14. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (13): HEATR/hinit (4)

---message from hinit---mf6, mt 59 does not give recoil za= 70174
one-particle recoil approx. used.

15. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (14): HEATR/hinit (4)

---message from hinit---mf6, mt 60 does not give recoil za= 70174
one-particle recoil approx. used.

16. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (15): HEATR/hinit (4)

---message from hinit---mf6, mt 61 does not give recoil za= 70174
one-particle recoil approx. used.

17. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (16): HEATR/hinit (4)

---message from hinit---mf6, mt 62 does not give recoil za= 70174
one-particle recoil approx. used.

18. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (17): HEATR/hinit (4)

---message from hinit---mf6, mt 63 does not give recoil za= 70174
one-particle recoil approx. used.

19. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (18): HEATR/hinit (4)

---message from hinit---mf6, mt 64 does not give recoil za= 70174
one-particle recoil approx. used.

20. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (19): HEATR/hinit (4)

---message from hinit---mf6, mt 65 does not give recoil za= 70174
one-particle recoil approx. used.

21. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (20): HEATR/hinit (4)

---message from hinit---mf6, mt 66 does not give recoil za= 70174
one-particle recoil approx. used.

22. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (21): HEATR/hinit (4)

---message from hinit---mf6, mt 67 does not give recoil za= 70174
one-particle recoil approx. used.

23. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (22): HEATR/hinit (4)

---message from hinit---mf6, mt 68 does not give recoil za= 70174
one-particle recoil approx. used.

24. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (23): HEATR/hinit (4)

---message from hinit---mf6, mt 69 does not give recoil za= 70174
one-particle recoil approx. used.

25. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (24): HEATR/hinit (4)

---message from hinit---mf6, mt 70 does not give recoil za= 70174
one-particle recoil approx. used.

26. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (25): HEATR/hinit (4)

---message from hinit---mf6, mt 71 does not give recoil za= 70174
one-particle recoil approx. used.

27. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (26): HEATR/hinit (4)

---message from hinit---mf6, mt 72 does not give recoil za= 70174
one-particle recoil approx. used.

28. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (27): HEATR/hinit (4)

---message from hinit---mf6, mt 73 does not give recoil za= 70174
one-particle recoil approx. used.

29. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (28): HEATR/hinit (4)

---message from hinit---mf6, mt 74 does not give recoil za= 70174
one-particle recoil approx. used.

30. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (29): HEATR/hinit (4)

---message from hinit---mf6, mt 75 does not give recoil za= 70174
one-particle recoil approx. used.

31. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (30): HEATR/hinit (4)

---message from hinit---mf6, mt 76 does not give recoil za= 70174
one-particle recoil approx. used.

32. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (31): HEATR/hinit (4)

---message from hinit---mf6, mt 77 does not give recoil za= 70174
one-particle recoil approx. used.

33. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (32): HEATR/hinit (4)

---message from hinit---mf6, mt 78 does not give recoil za= 70174
one-particle recoil approx. used.

34. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (33): HEATR/hinit (4)

---message from hinit---mf6, mt 79 does not give recoil za= 70174
one-particle recoil approx. used.

35. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (34): HEATR/hinit (4)

---message from hinit---mf6, mt 80 does not give recoil za= 70174
one-particle recoil approx. used.

36. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (35): HEATR/hinit (4)

---message from hinit---mf6, mt 81 does not give recoil za= 70174
one-particle recoil approx. used.

37. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (36): HEATR/hinit (4)

---message from hinit---mf6, mt 82 does not give recoil za= 70174
one-particle recoil approx. used.

38. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (37): HEATR/hinit (4)

---message from hinit---mf6, mt 83 does not give recoil za= 70174
one-particle recoil approx. used.

39. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (38): HEATR/hinit (4)

---message from hinit---mf6, mt 84 does not give recoil za= 70174
one-particle recoil approx. used.

40. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (39): HEATR/hinit (4)

---message from hinit---mf6, mt 91 does not give recoil za= 70174
one-particle recoil approx. used.

41. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (40): HEATR/hinit (4)

---message from hinit---mf6, mt203 does not give recoil za= 69174
one-particle recoil approx. used.

42. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (41): HEATR/hinit (4)

---message from hinit---mf6, mt204 does not give recoil za= 69173
one-particle recoil approx. used.

43. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (42): HEATR/hinit (4)

---message from hinit---mf6, mt205 does not give recoil za= 69172
one-particle recoil approx. used.

44. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (43): HEATR/hinit (4)

```
---message from hinit---mf6, mt206 does not give recoil za= 68172
one-particle recoil approx. used.
```

45. Recoil is not given, so one-particle recoil approximation used.
heatr...prompt kerma (44): HEATR/hinit (4)

```
---message from hinit---mf6, mt207 does not give recoil za= 68171
one-particle recoil approx. used.
```

- **njoy2012 Errors:**

1. An unidentified mismatch in a photon production sum
check...ace consistency check (0): Gamma sum

```
check photon production sum
  consis: mismatch at 7.343750E-05 gpd= 3.209784E-01 sum= 3.210115E-01
```

2. An unidentified mismatch in a photon production sum
check...ace consistency check (1): Gamma sum

```
check photon production sum
  consis: mismatch at 8.750000E-05 gpd= 2.294949E-01 sum= 2.294719E-01
```

3. An unidentified mismatch in a photon production sum
check...ace consistency check (2): Gamma sum

```
check photon production sum
  consis: mismatch at 5.173269E-04 gpd= 2.587151E-02 sum= 2.587414E-02
```

4. An unidentified mismatch in a photon production sum
check...ace consistency check (3): Gamma sum

```
check photon production sum
  consis: mismatch at 5.319881E-04 gpd= 3.002956E-02 sum= 3.002603E-02
```

5. An unidentified mismatch in a photon production sum
check...ace consistency check (4): Gamma sum

```
check photon production sum
  consis: mismatch at 6.463052E-04 gpd= 2.048018E-02 sum= 2.048297E-02
```

6. An unidentified mismatch in a photon production sum
check...ace consistency check (5): Gamma sum

```
check photon production sum
  consis: mismatch at 6.490364E-04 gpd= 1.954339E-02 sum= 1.954107E-02
```

7. An unidentified mismatch in a photon production sum
check...ace consistency check (6): Gamma sum

```
check photon production sum
  consis: mismatch at 6.517677E-04 gpd= 1.871159E-02 sum= 1.871387E-02
```

8. An unidentified mismatch in a photon production sum
check...ace consistency check (7): Gamma sum

```
check photon production sum
  consis: mismatch at 6.590990E-04 gpd= 1.695103E-02 sum= 1.694811E-02
```

9. An unidentified mismatch in a photon production sum
check...ace consistency check (8): Gamma sum

```
check photon production sum
  consis: mismatch at 6.682990E-04 gpd= 1.540037E-02 sum= 1.539843E-02
```

10. An unidentified mismatch in a photon production sum
check...ace consistency check (9): Gamma sum

```
check photon production sum
  consis: mismatch at 6.728990E-04 gpd= 1.481885E-02 sum= 1.482040E-02
```

11. An unidentified mismatch in a photon production sum
check...ace consistency check (10): Gamma sum

```
check photon production sum
  consis: mismatch at 6.866991E-04 gpd= 1.362738E-02 sum= 1.362437E-02
```

12. An unidentified mismatch in a photon production sum
check...ace consistency check (11): Gamma sum

```
check photon production sum
  consis: mismatch at 7.000000E-04 gpd= 1.301727E-02 sum= 1.301870E-02
```

13. An unidentified mismatch in a photon production sum
check...ace consistency check (12): Gamma sum

```
check photon production sum
  consis: mismatch at 7.061312E-04 gpd= 1.287943E-02 sum= 1.287813E-02
```

14. An unidentified mismatch in a photon production sum
check...ace consistency check (13): Gamma sum

```
check photon production sum
  consis: mismatch at 7.482902E-04 gpd= 1.384361E-02 sum= 1.384528E-02
```

15. An unidentified mismatch in a photon production sum
check...ace consistency check (14): Gamma sum

```
check photon production sum
  consis: mismatch at 7.652621E-04 gpd= 1.538291E-02 sum= 1.538046E-02
```

16. An unidentified mismatch in a photon production sum
check...ace consistency check (15): Gamma sum

```
check photon production sum
  consis: mismatch at 7.950375E-04 gpd= 2.137705E-02 sum= 2.137442E-02
```

17. An unidentified mismatch in a photon production sum
check...ace consistency check (16): Gamma sum

```
check photon production sum
  consis: mismatch at 1.062800E-03 gpd= 2.078134E-02 sum= 2.078473E-02
```

18. An unidentified mismatch in a photon production sum
check...ace consistency check (17): Gamma sum

```
check photon production sum
  consis: mismatch at 1.077483E-03 gpd= 1.704319E-02 sum= 1.704544E-02
```

19. An unidentified mismatch in a photon production sum
check...ace consistency check (18): Gamma sum

```
check photon production sum
  consis: mismatch at 1.085084E-03 gpd= 1.595540E-02 sum= 1.595719E-02
```

20. An unidentified mismatch in a photon production sum
check...ace consistency check (19): Gamma sum

```
check photon production sum
  consis: mismatch at 1.100286E-03 gpd= 1.479056E-02 sum= 1.479333E-02
```

21. An unidentified mismatch in a photon production sum
check...ace consistency check (20): Gamma sum

```
check photon production sum
  consis: mismatch at 1.107886E-03 gpd= 1.460071E-02 sum= 1.459764E-02
```

22. An unidentified mismatch in a photon production sum
check...ace consistency check (21): Gamma sum

```
check photon production sum
  consis: mismatch at 1.115487E-03 gpd= 1.463227E-02 sum= 1.463555E-02
```

23. An unidentified mismatch in a photon production sum
check...ace consistency check (22): Gamma sum

```
check photon production sum
  consis: mismatch at 1.130689E-03 gpd= 1.552856E-02 sum= 1.553038E-02
```

24. An unidentified mismatch in a photon production sum
check...ace consistency check (23): Gamma sum

```
check photon production sum
  consis: mismatch at 1.138290E-03 gpd= 1.660251E-02 sum= 1.660083E-02
```

25. An unidentified mismatch in a photon production sum
check...ace consistency check (24): Gamma sum

```
check photon production sum
  consis: mismatch at 1.146582E-03 gpd= 1.871466E-02 sum= 1.871818E-02
```

26. An unidentified mismatch in a photon production sum
check...ace consistency check (25): Gamma sum

```
check photon production sum
  consis: mismatch at 1.156775E-03 gpd= 2.481860E-02 sum= 2.481600E-02
```

27. An unidentified mismatch in a photon production sum
check...ace consistency check (26): Gamma sum

```
check photon production sum
  consis: mismatch at 1.227570E-03 gpd= 3.213389E-02 sum= 3.213063E-02
```

28. An unidentified mismatch in a photon production sum
check...ace consistency check (27): Gamma sum

```
check photon production sum
  consis: mismatch at 1.416189E-03 gpd= 2.405399E-02 sum= 2.405661E-02
```

29. An unidentified mismatch in a photon production sum
check...ace consistency check (28): Gamma sum

```
check photon production sum
  consis: mismatch at 1.490607E-03 gpd= 3.114101E-02 sum= 3.114473E-02
```

30. An unidentified mismatch in a photon production sum
check...ace consistency check (29): Gamma sum

```
check photon production sum
  consis: mismatch at 1.686727E-03 gpd= 2.133218E+00 sum= 2.133442E+00
```

31. An unidentified mismatch in a photon production sum
check...ace consistency check (30): Gamma sum

```
check photon production sum
  consis: mismatch at 1.761273E-03 gpd= 2.330404E-01 sum= 2.330675E-01
```

32. An unidentified mismatch in a photon production sum
check...ace consistency check (31): Gamma sum

```
check photon production sum
  consis: mismatch at 1.768335E-03 gpd= 1.612890E-01 sum= 1.612666E-01
```

33. An unidentified mismatch in a photon production sum
check...ace consistency check (32): Gamma sum

```
check photon production sum
  consis: mismatch at 1.770047E-03 gpd= 1.500991E-01 sum= 1.500754E-01
```

34. An unidentified mismatch in a photon production sum
check...ace consistency check (33): Gamma sum

```
check photon production sum
  consis: mismatch at 1.776895E-03 gpd= 1.176926E-01 sum= 1.177157E-01
```

35. An unidentified mismatch in a photon production sum
check...ace consistency check (34): Gamma sum

```
check photon production sum
  consis: mismatch at 1.778607E-03 gpd= 1.117567E-01 sum= 1.117416E-01
```

36. An unidentified mismatch in a photon production sum
check...ace consistency check (35): Gamma sum

```
check photon production sum
  consis: mismatch at 1.780319E-03 gpd= 1.063823E-01 sum= 1.063696E-01
```

37. An unidentified mismatch in a photon production sum
check...ace consistency check (36): Gamma sum

```
check photon production sum
  consis: mismatch at 1.782031E-03 gpd= 1.015294E-01 sum= 1.015148E-01
```

38. An unidentified mismatch in a photon production sum
check...ace consistency check (37): Gamma sum

```
check photon production sum
  consis: mismatch at 1.800864E-03 gpd= 6.860100E-02 sum= 6.858392E-02
```

39. An unidentified mismatch in a photon production sum
check...ace consistency check (38): Gamma sum

```
check photon production sum
  consis: mismatch at 1.805572E-03 gpd= 6.382806E-02 sum= 6.381431E-02
```

40. An unidentified mismatch in a photon production sum
check...ace consistency check (39): Gamma sum

```
check photon production sum
  consis: mismatch at 1.814988E-03 gpd= 5.644786E-02 sum= 5.648530E-02
```

41. An unidentified mismatch in a photon production sum
check...ace consistency check (40): Gamma sum

```
check photon production sum
  consis: mismatch at 1.824404E-03 gpd= 5.139360E-02 sum= 5.141878E-02
```

42. An unidentified mismatch in a photon production sum
check...ace consistency check (41): Gamma sum

```
check photon production sum
  consis: mismatch at 1.833820E-03 gpd= 4.806362E-02 sum= 4.805387E-02
```

43. An unidentified mismatch in a photon production sum
check...ace consistency check (42): Gamma sum

```
check photon production sum
  consis: mismatch at 1.986077E-03 gpd= 2.860838E-01 sum= 2.860501E-01
```

44. An unidentified mismatch in a photon production sum
check...ace consistency check (43): Gamma sum

```
check photon production sum
  consis: mismatch at 1.994186E-03 gpd= 1.718505E-01 sum= 1.718269E-01
```

45. An unidentified mismatch in a photon production sum
check...ace consistency check (44): Gamma sum

```
check photon production sum
  consis: mismatch at 1.995257E-03 gpd= 1.622777E-01 sum= 1.622515E-01
```

46. An unidentified mismatch in a photon production sum
check...ace consistency check (45): Gamma sum

```
check photon production sum
  consis: mismatch at 2.000000E-03 gpd= 1.285931E-01 sum= 1.286151E-01
```

47. An unidentified mismatch in a photon production sum
check...ace consistency check (46): Gamma sum

```
check photon production sum
  consis: mismatch at 2.001570E-03 gpd= 1.199019E-01 sum= 1.199191E-01
```

48. An unidentified mismatch in a photon production sum
check...ace consistency check (47): Gamma sum

```
check photon production sum
  consis: mismatch at 2.003139E-03 gpd= 1.121720E-01 sum= 1.121599E-01
```

49. An unidentified mismatch in a photon production sum
check...ace consistency check (48): Gamma sum

```
check photon production sum
  consis: mismatch at 2.006277E-03 gpd= 9.895508E-02 sum= 9.894002E-02
```

50. An unidentified mismatch in a photon production sum
check...ace consistency check (49): Gamma sum

```
check photon production sum
  consis: mismatch at 2.007847E-03 gpd= 9.326782E-02 sum= 9.328235E-02
```

51. An unidentified mismatch in a photon production sum
check...ace consistency check (50): Gamma sum

```
check photon production sum
  consis: mismatch at 2.009416E-03 gpd= 8.818132E-02 sum= 8.816170E-02
```

52. An unidentified mismatch in a photon production sum
check...ace consistency check (51): Gamma sum

```
check photon production sum
  consis: mismatch at 2.012554E-03 gpd= 7.929000E-02 sum= 7.927675E-02
```

53. An unidentified mismatch in a photon production sum
check...ace consistency check (52): Gamma sum

```
check photon production sum
  consis: mismatch at 2.019830E-03 gpd= 6.391048E-02 sum= 6.393867E-02
```

54. An unidentified mismatch in a photon production sum
check...ace consistency check (53): Gamma sum

```
check photon production sum
  consis: mismatch at 2.024680E-03 gpd= 5.658118E-02 sum= 5.658823E-02
```

55. An unidentified mismatch in a photon production sum
check...ace consistency check (54): Gamma sum

```
check photon production sum
  consis: mismatch at 2.027105E-03 gpd= 5.357735E-02 sum= 5.356646E-02
```

56. An unidentified mismatch in a photon production sum
check...ace consistency check (55): Gamma sum

```
check photon production sum
  consis: mismatch at 2.029530E-03 gpd= 5.093398E-02 sum= 5.091704E-02
```

57. An unidentified mismatch in a photon production sum
check...ace consistency check (56): Gamma sum

```
check photon production sum
  consis: mismatch at 2.035664E-03 gpd= 4.568717E-02 sum= 4.567872E-02
```

58. An unidentified mismatch in a photon production sum
check...ace consistency check (57): Gamma sum

```
check photon production sum
  consis: mismatch at 2.039373E-03 gpd= 4.344414E-02 sum= 4.345027E-02
```

59. An unidentified mismatch in a photon production sum
check...ace consistency check (58): Gamma sum

```
check photon production sum
  consis: mismatch at 2.043082E-03 gpd= 4.192190E-02 sum= 4.194909E-02
```

60. An unidentified mismatch in a photon production sum
check...ace consistency check (59): Gamma sum

```
check photon production sum
  consis: mismatch at 2.046791E-03 gpd= 4.128058E-02 sum= 4.130857E-02
```

61. An unidentified mismatch in a photon production sum
check...ace consistency check (60): Gamma sum

```
check photon production sum
  consis: mismatch at 2.052212E-03 gpd= 4.272097E-02 sum= 4.271224E-02
```

62. An unidentified mismatch in a photon production sum
check...ace consistency check (61): Gamma sum

```
check photon production sum
  consis: mismatch at 2.054922E-03 gpd= 4.520280E-02 sum= 4.518230E-02
```

63. An unidentified mismatch in a photon production sum
check...ace consistency check (62): Gamma sum

```
check photon production sum
  consis: mismatch at 2.079709E-03 gpd= 1.423591E-01 sum= 1.423448E-01
```

64. An unidentified mismatch in a photon production sum
check...ace consistency check (63): Gamma sum

```
check photon production sum
  consis: mismatch at 2.081163E-03 gpd= 1.013642E-01 sum= 1.013419E-01
```

65. An unidentified mismatch in a photon production sum
check...ace consistency check (64): Gamma sum

```
check photon production sum
  consis: mismatch at 2.081890E-03 gpd= 8.823298E-02 sum= 8.824363E-02
```

66. An unidentified mismatch in a photon production sum
check...ace consistency check (65): Gamma sum

```
check photon production sum
  consis: mismatch at 2.082617E-03 gpd= 7.806432E-02 sum= 7.807945E-02
```

67. An unidentified mismatch in a photon production sum
check...ace consistency check (66): Gamma sum

```
check photon production sum
  consis: mismatch at 2.083617E-03 gpd= 6.741524E-02 sum= 6.742817E-02
```

68. An unidentified mismatch in a photon production sum
check...ace consistency check (67): Gamma sum

```
check photon production sum
  consis: mismatch at 2.084617E-03 gpd= 5.944845E-02 sum= 5.944169E-02
```

69. An unidentified mismatch in a photon production sum
check...ace consistency check (68): Gamma sum

```
check photon production sum
  consis: mismatch at 2.120431E-03 gpd= 1.939672E-02 sum= 1.939422E-02
```

70. An unidentified mismatch in a photon production sum
check...ace consistency check (69): Gamma sum

```
check photon production sum
  consis: mismatch at 2.174969E-03 gpd= 2.080060E-02 sum= 2.080388E-02
```

71. An unidentified mismatch in a photon production sum
check...ace consistency check (70): Gamma sum

```
check photon production sum
  consis: mismatch at 2.282642E-03 gpd= 1.565497E-01 sum= 1.565190E-01
```

72. An unidentified mismatch in a photon production sum
check...ace consistency check (71): Gamma sum

```
check photon production sum
  consis: mismatch at 2.286862E-03 gpd= 1.134704E-01 sum= 1.134994E-01
```

73. An unidentified mismatch in a photon production sum
check...ace consistency check (72): Gamma sum

```
check photon production sum
  consis: mismatch at 2.328436E-03 gpd= 2.502126E-02 sum= 2.501812E-02
```

74. An unidentified mismatch in a photon production sum
check...ace consistency check (73): Gamma sum

```
check photon production sum
  consis: mismatch at 2.359670E-03 gpd= 1.810460E-02 sum= 1.810650E-02
```

75. An unidentified mismatch in a photon production sum
check...ace consistency check (74): Gamma sum

```
check photon production sum
  consis: mismatch at 2.381196E-03 gpd= 1.784700E-02 sum= 1.784379E-02
```

76. An unidentified mismatch in a photon production sum
check...ace consistency check (75): Gamma sum

```
check photon production sum
  consis: mismatch at 2.390482E-03 gpd= 1.860185E-02 sum= 1.859845E-02
```

77. An unidentified mismatch in a photon production sum
check...ace consistency check (76): Gamma sum

```
check photon production sum
  consis: mismatch at 2.418339E-03 gpd= 2.595461E-02 sum= 2.595723E-02
```

78. An unidentified mismatch in a photon production sum
check...ace consistency check (77): Gamma sum

```
check photon production sum
  consis: mismatch at 2.648668E-03 gpd= 2.621151E-01 sum= 2.620803E-01
```

79. An unidentified mismatch in a photon production sum
check...ace consistency check (78): Gamma sum

```
check photon production sum
  consis: mismatch at 2.655714E-03 gpd= 1.713837E-01 sum= 1.714027E-01
```

80. An unidentified mismatch in a photon production sum
check...ace consistency check (79): Gamma sum

```
check photon production sum
  consis: mismatch at 2.657006E-03 gpd= 1.603618E-01 sum= 1.603783E-01
```

81. An unidentified mismatch in a photon production sum
check...ace consistency check (80): Gamma sum

```
check photon production sum
  consis: mismatch at 2.658297E-03 gpd= 1.505380E-01 sum= 1.505620E-01
```

82. An unidentified mismatch in a photon production sum
check...ace consistency check (81): Gamma sum

```
check photon production sum
  consis: mismatch at 2.663463E-03 gpd= 1.210266E-01 sum= 1.210003E-01
```

83. An unidentified mismatch in a photon production sum
check...ace consistency check (82): Gamma sum

```
check photon production sum
  consis: mismatch at 2.665342E-03 gpd= 1.135588E-01 sum= 1.135399E-01
```

84. An unidentified mismatch in a photon production sum
check...ace consistency check (83): Gamma sum

```
check photon production sum
  consis: mismatch at 2.667221E-03 gpd= 1.078081E-01 sum= 1.077812E-01
```

85. An unidentified mismatch in a photon production sum
check...ace consistency check (84): Gamma sum

```
check photon production sum
  consis: mismatch at 2.669100E-03 gpd= 1.039740E-01 sum= 1.039604E-01
```

86. An unidentified mismatch in a photon production sum
check...ace consistency check (85): Gamma sum

```
check photon production sum
  consis: mismatch at 2.670978E-03 gpd= 1.027354E-01 sum= 1.027098E-01
```

87. An unidentified mismatch in a photon production sum
check...ace consistency check (86): Gamma sum

```
check photon production sum
  consis: mismatch at 2.672270E-03 gpd= 1.040125E-01 sum= 1.040391E-01
```

88. An unidentified mismatch in a photon production sum
check...ace consistency check (87): Gamma sum

```
check photon production sum
  consis: mismatch at 2.673562E-03 gpd= 1.082043E-01 sum= 1.082264E-01
```

89. An unidentified mismatch in a photon production sum
check...ace consistency check (88): Gamma sum

```
check photon production sum
  consis: mismatch at 2.676145E-03 gpd= 1.362720E-01 sum= 1.363028E-01
```

90. An unidentified mismatch in a photon production sum
check...ace consistency check (89): Gamma sum

```
check photon production sum
  consis: mismatch at 2.676791E-03 gpd= 1.528813E-01 sum= 1.529057E-01
```

91. An unidentified mismatch in a photon production sum
check...ace consistency check (90): Gamma sum

```
check photon production sum
  consis: mismatch at 2.677760E-03 gpd= 1.972795E-01 sum= 1.972566E-01
```

92. An unidentified mismatch in a photon production sum
check...ace consistency check (91): Gamma sum

```
check photon production sum
  consis: mismatch at 2.678406E-03 gpd= 2.596847E-01 sum= 2.596500E-01
```

93. An unidentified mismatch in a photon production sum
check...ace consistency check (92): Gamma sum

```
check photon production sum
  consis: mismatch at 2.687567E-03 gpd= 1.424934E-01 sum= 1.425100E-01
```

94. An unidentified mismatch in a photon production sum
check...ace consistency check (93): Gamma sum

```
check photon production sum
  consis: mismatch at 2.689603E-03 gpd= 9.270570E-02 sum= 9.274115E-02
```

95. An unidentified mismatch in a photon production sum
check...ace consistency check (94): Gamma sum

```
check photon production sum
  consis: mismatch at 2.690417E-03 gpd= 8.260439E-02 sum= 8.258598E-02
```

96. An unidentified mismatch in a photon production sum
check...ace consistency check (95): Gamma sum

```
check photon production sum
  consis: mismatch at 2.691658E-03 gpd= 7.170452E-02 sum= 7.169295E-02
```

97. An unidentified mismatch in a photon production sum
check...ace consistency check (96): Gamma sum

```
check photon production sum
  consis: mismatch at 2.692899E-03 gpd= 6.411850E-02 sum= 6.410533E-02
```

98. An unidentified mismatch in a photon production sum
check...ace consistency check (97): Gamma sum

```
check photon production sum
  consis: mismatch at 2.694140E-03 gpd= 5.848884E-02 sum= 5.847523E-02
```

99. An unidentified mismatch in a photon production sum
check...ace consistency check (98): Gamma sum

```
check photon production sum
  consis: mismatch at 2.695380E-03 gpd= 5.409689E-02 sum= 5.410356E-02
```

100. An unidentified mismatch in a photon production sum
check...ace consistency check (99): Gamma sum

```
check photon production sum
  consis: mismatch at 2.698017E-03 gpd= 4.734920E-02 sum= 4.733482E-02
```

101. An unidentified mismatch in a photon production sum
check...ace consistency check (100): Gamma sum

```
check photon production sum
  consis: mismatch at 2.708874E-03 gpd= 3.317477E-02 sum= 3.320157E-02
```

102. An unidentified mismatch in a photon production sum
check...ace consistency check (101): Gamma sum

```
check photon production sum
  consis: mismatch at 2.711821E-03 gpd= 3.089884E-02 sum= 3.091021E-02
```

103. An unidentified mismatch in a photon production sum
check...ace consistency check (102): Gamma sum

- ```

check photon production sum
 consis: mismatch at 2.723609E-03 gpd= 2.427068E-02 sum= 2.427915E-02
```
104. An unidentified mismatch in a photon production sum  
*check...ace consistency check (103): Gamma sum*
- ```

check photon production sum
  consis: mismatch at 2.729503E-03 gpd= 2.191489E-02 sum= 2.192749E-02
```
105. An unidentified mismatch in a photon production sum
check...ace consistency check (104): Gamma sum
- ```

check photon production sum
 consis: mismatch at 2.766727E-03 gpd= 1.361770E-02 sum= 1.361495E-02
```
106. An unidentified mismatch in a photon production sum  
*check...ace consistency check (105): Gamma sum*
- ```

check photon production sum
  consis: mismatch at 2.780376E-03 gpd= 1.202451E-02 sum= 1.202682E-02
```
107. An unidentified mismatch in a photon production sum
check...ace consistency check (106): Gamma sum
- ```

check photon production sum
 consis: mismatch at 2.794025E-03 gpd= 1.084654E-02 sum= 1.084481E-02
```
108. An unidentified mismatch in a photon production sum  
*check...ace consistency check (107): Gamma sum*
- ```

check photon production sum
  consis: mismatch at 2.821322E-03 gpd= 9.305027E-03 sum= 9.302792E-03
```
109. An unidentified mismatch in a photon production sum
check...ace consistency check (108): Gamma sum
- ```

check photon production sum
 consis: mismatch at 2.833731E-03 gpd= 8.869609E-03 sum= 8.867495E-03
```
110. An unidentified mismatch in a photon production sum  
*check...ace consistency check (109): Gamma sum*
- ```

check photon production sum
  consis: mismatch at 2.846139E-03 gpd= 8.557921E-03 sum= 8.559405E-03
```
111. An unidentified mismatch in a photon production sum
check...ace consistency check (110): Gamma sum
- ```

check photon production sum
 consis: mismatch at 2.870955E-03 gpd= 8.289693E-03 sum= 8.286446E-03
```
112. An unidentified mismatch in a photon production sum  
*check...ace consistency check (111): Gamma sum*
- ```

check photon production sum
  consis: mismatch at 2.884604E-03 gpd= 8.321100E-03 sum= 8.323526E-03
```

113. An unidentified mismatch in a photon production sum
check...ace consistency check (112): Gamma sum

```
check photon production sum
  consis: mismatch at 2.898253E-03 gpd= 8.500088E-03 sum= 8.502833E-03
```

114. An unidentified mismatch in a photon production sum
check...ace consistency check (113): Gamma sum

```
check photon production sum
  consis: mismatch at 2.911902E-03 gpd= 8.842585E-03 sum= 8.845357E-03
```

115. An unidentified mismatch in a photon production sum
check...ace consistency check (114): Gamma sum

```
check photon production sum
  consis: mismatch at 2.925551E-03 gpd= 9.388442E-03 sum= 9.391186E-03
```

116. An unidentified mismatch in a photon production sum
check...ace consistency check (115): Gamma sum

```
check photon production sum
  consis: mismatch at 2.936719E-03 gpd= 1.003803E-02 sum= 1.003690E-02
```

117. An unidentified mismatch in a photon production sum
check...ace consistency check (116): Gamma sum

```
check photon production sum
  consis: mismatch at 2.947886E-03 gpd= 1.091886E-02 sum= 1.092232E-02
```

118. An unidentified mismatch in a photon production sum
check...ace consistency check (117): Gamma sum

```
check photon production sum
  consis: mismatch at 2.959053E-03 gpd= 1.213855E-02 sum= 1.213653E-02
```

119. An unidentified mismatch in a photon production sum
check...ace consistency check (118): Gamma sum

```
check photon production sum
  consis: mismatch at 2.983869E-03 gpd= 1.695381E-02 sum= 1.695664E-02
```

120. An unidentified mismatch in a photon production sum
check...ace consistency check (119): Gamma sum

```
check photon production sum
  consis: mismatch at 2.990694E-03 gpd= 1.921001E-02 sum= 1.921263E-02
```

121. An unidentified mismatch in a photon production sum
check...ace consistency check (120): Gamma sum

```
check photon production sum
  consis: mismatch at 2.995812E-03 gpd= 2.137454E-02 sum= 2.137229E-02
```